

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1, 3, 6-14, 16-21, 24-25, 28, 36, and 43 are pending in this application, Claims 1, 3, 6-14, 16, 17, 21, 28, and 36 having been amended, Claim 43 having been added, and Claims 2, 15, 22-23, 26-27, 32, and 37-41 having been canceled with prejudice or disclaimer. The changes and additions to the claims do not add new matter and are supported by the originally filed specification, for example, on page 5, lines 1-4; page 6, line 32 to page 7, line 24; page 9, lines 13-26; page 10, lines 21-22; Fig. 1; and original Claims 2 and 37.

In the outstanding Office Action, Claims 1-3 and 6-27 were rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter; and Claims 1-3, 6-28, 32 and 36-41 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Taro (European Patent No. 1189372).¹

Applicants thank the examiner for the courtesy of an interview with Applicants' representative, Mr. Sameer Gokhale, on September 3, 2009. During the interview, the differences between the Applicants' disclosed embodiments and the applied art were discussed. Further, clarifying claim amendments were also discussed. In addition, the Examiner indicated that the amended claims appear to overcome the applied art, however further search and/or consideration may be necessary. Arguments and claims similar to those presented during the interview are presented for formal consideration.

With respect to the rejection of Claim 1 under 35 U.S.C. §101, Applicants respectfully submit that the present amendment to Claim 1 explicitly recites a method tied to a particular machine or apparatus, such as an "apparatus for processing a digital audio signal." Therefore, Applicants submit that this ground of rejection is overcome.

¹ The outstanding Office Action cites to Taro (EP 1189362) on page 5, line 14. However, Applicants believe the Office was actually referring to Taro (EP 1189372), and thus will proceed under this assumption.

With respect to the rejection of Claim 1 under 35 U.S.C. §103(a), Applicants respectfully submit that the amendment to Claim 1 overcomes this ground of rejection.

Amended Claim 1 recites, *inter alia*,

spectrally encoding, at the apparatus, the digital audio signal to generate audio band data components representing audio contributions of said digital audio signal in respective ones of a set of frequency bands;

spectrally encoding, at the apparatus, a watermark audio signal using the same encoding as that applied to the digital audio signal, to generate watermark band data components representing audio contributions of said watermark audio signal in respective ones of said set of frequency bands;

altering, at the apparatus, a subset comprising one or more of said audio band data components by combining or replacing one or more of said audio band data components with corresponding ones of said watermark band data components, to produce a band-altered digital audio signal having altered band data components.

Applicants submit that Taro fails to disclose or suggest all of the features of amended Claim 1.

Taro describes an audio distribution system and method for protecting audio contents using a watermark technique (see para. [0001]-[0002] of Taro). The outstanding Office Action cited the second embodiment Taro as describing “altering a subset comprising one or more of said band data components by combining or replacing one or more of said band data components by corresponding band data components from a spectrally-encoded digital audio watermark signal” as previously recited in Claim 1 (see Office Action, at page 6).

In the second embodiment, Taro describes how an audio signal is separated into a plurality of frequency bands (see para. [0078]). The frequency bands comprise a basic part and a high quality part, with the basic part comprising three frequency bands in the telephone voice band of 300Hz to 3.4kHz (see para. [0079] and Fig. 4(b)). Additionally, in the second embodiment, the third key is stored in the basic part, in the same way as in embodiment 1.

Applicants submit that the invention defined by amended Claim 1 is different than the second embodiment of Taro. Taro describes embedding a watermark (in the form of a key) into one or more of the audio components, where the watermark is not audible to a human sense of hearing in this embodiment (see para. [0081]-0083]). However, in the second embodiment of Taro, the watermark is not separately spectrally encoded before being combined with the audio signal while using the same encoding technique and band definitions as is used to spectrally encode the digital audio signal.

On the contrary, in the invention defined by amended Claim 1, a watermark signal is separately spectrally encoded from the spectral encoding of a digital audio signal while using the same encoding as that applied to the digital audio signal. Thus, the spectrally encoded watermark signal and the spectrally encoded audio signal can be combined to form a watermarked audio signal without the need to decode either the watermark signal or the audio signal, and they can be combined by simply exchanging one encoded frequency band data component for another. Applicants submit that this makes for a very straight-forward watermarking system without the need for audio-domain adders and the like described in Taro.

Furthermore, Applicants submit that because in Claim 1, the watermark and the audio signal are separately spectrally-encoded using the same encoding technique before combination, a simple substitution of band data components can be used and yet the resulting watermarked audio file can still be spectrally-decoded into an audible signal by the recipient.

However, because Taro does not disclose or suggest separately spectrally encoding the watermark signal and the audio signal before they are combined, as defined in amended Claim 1, Taro's method cannot provide all of the advantages discussed above.

Therefore, Applicants submit that Taro fails to disclose or suggest all of “*spectrally encoding, at the apparatus, the digital audio signal to generate audio band data*”

components representing audio contributions of said digital audio signal in respective ones of a set of frequency bands,” “spectrally encoding, at the apparatus, a watermark audio signal using the same encoding as that applied to the digital audio signal, to generate watermark band data components representing audio contributions of said watermark audio signal in respective ones of said set of frequency bands,” and “altering, at the apparatus, a subset comprising one or more of said audio band data components by combining or replacing one or more of said audio band data components with corresponding ones of said watermark band data components, to produce a band-altered digital audio signal having altered band data components,” as defined in amended Claim 1.

Applicants have considered the remaining embodiments described by Taro, but they also fail to disclose or suggest all of the features of amended Claim 1 discussed above.


Therefore, Applicants submit that amended Claim 1 (and all associated dependent claims) patentably distinguishes over Taro.

Amended independent Claims 28 and 36, and new independent Claim 43, recite features similar to those of amended Claim 1 discussed above. Therefore, Applicants submit that Claims 28, 36, and 43 (and all associated dependent claims) patentably distinguish over Taro.

Consequently, in light of the above discussion and in view of the present amendment this application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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